

The following sample exam for Aviation Maintenance Technician Powerplant (AMP) is suitable study material to satisfy the powerplant portion of the Aviation Maintenance Technician test. These questions are a representation of questions that can be found on AMP test. The applicant must realize that these questions are to be used as a study guide, and are not necessarily actual test questions. The full AMA test contains 100 questions. The Application Identification, Information Verification and Authorization Requirements Matrix lists all FAA exams. It is available at: http://www.faa.gov/training_testing/testing/airmen/media/testing_matrix.pdf

The FAA testing system is supported by a series of supplement publications. These publications include the graphics, legends, and maps that are needed to successfully respond to certain test questions. FAA-CT-8080-4, Computer Testing Supplement for Aviation Mechanic General, Powerplant, and Airframe; and Parachute Rigger is available at:
http://www.faa.gov/training_testing/testing/airmen/test_questions/media/FAA-CT-8080-4E.pdf

The Learning Statement Reference Guide for Airman Knowledge Testing contains listings of learning statements with their associated codes. Matching the learning statement codes with the codes listed on your Airman Knowledge Test Report assists in the evaluation of knowledge areas missed on your exam. It is available at:
http://www.faa.gov/training_testing/testing/airmen/media/LearningStatementReferenceGuide.pdf

SAMPLE AMP EXAM:

1. AMP030

What is likely to occur if a reciprocating engine is operated at high power settings before it is properly warmed up?

- A) Oil starvation of bearings and other parts.
- B) Excessive thinning of the engine oil.
- C) Accelerated oil breakdown and oxidation.

2. AMP063

If the ignition switch is moved from BOTH to either LEFT or RIGHT during an engine ground check, normal operation is usually indicated by a

- A) large drop in RPM.
- B) momentary interruption of both ignition systems.
- C) slight drop in RPM.

3. AMP056

The five events of a four stroke cycle engine in the order of their occurrence are

- A) intake, ignition, compression, power, exhaust.
- B) intake, power, compression, ignition, exhaust.
- C) intake, compression, ignition, power, exhaust.

4. AMP056

During the inspection of an engine control system in which push pull control rods are used, the threaded rod ends should

- A) not be adjusted in length for rigging purposes because the rod ends have been properly positioned and staked during manufacture.
- B) be checked for thread engagement of at least two threads but not more than four threads.
- C) be checked for the amount of thread engagement by means of the inspection holes.

5. AMP056

Master rod bearings are generally what type?

- A) Plain.
- B) Roller.
- C) Ball.

6. AMP056

What is the purpose of the safety circlip installed on some valve stems?

- A) To hold the valve guide in position.
- B) To hold the valve spring retaining washer in position.
- C) To prevent valves from falling into the combustion chamber.

7. AMP056

Some cylinder barrels are hardened by

- A) nitriding.
- B) shot peening.
- C) tempering.

8. AMP056

The purpose of two or more valve springs in aircraft engines is to

- A) equalize side pressure on the valve stems.
- B) eliminate valve spring surge.
- C) equalize valve face loading.

9. AMP056

The volume of a cylinder equals 70 cubic inches when the piston is at bottom center. When the piston is at the top of the cylinder, the volume equals 10 cubic inches. What is the compression ratio?

- A) 1:7.
- B) 7:10.
- C) 7:1.

10. AMP056

How is proper end-gap clearance on new piston rings assured during the overhaul of an engine?

- A) By accurately measuring and matching the outside diameter of the rings with the inside diameter of the cylinders.
- B) By using rings specified by the engine manufacturer.
- C) By placing the rings in the cylinder and measuring the end-gap with a feeler gauge.

11. AMP068

Three types of turbine blades are

- A) reaction, converging, and diverging.
- B) impulse, reaction, and impulse reaction.
- C) impulse, vector, and impulse-vector.

12. AMP068

Turbine blades are generally more susceptible to operating damage than compressor blades because of

- A) higher centrifugal loading.
- B) exposure to high temperatures.
- C) high pressure and high velocity gas flow.

13. AMP068

The non-rotating axial-flow compressor airfoils in an aircraft gas turbine engine, are called

- A) pressurization vanes.
- B) stator vanes.
- C) bleed vanes.

14. AMP068

When starting a turbine engine, a hung start is indicated if the engine

- A) exhaust gas temperature exceeds specified limits.
- B) fails to reach idle RPM.
- C) RPM exceeds specified operating speed.

15. AMP020

Newton's Law of Motion generally termed the, "Law of Momentum", states:

- A) Acceleration is produced when a force acts on a mass. The greater the mass, the greater the amount of force needed.
- B) For every action there is an equal and opposite reaction.
- C) Every body persists in its state of rest, or of motion in a straight line, unless acted upon by some outside force.

16. AMP069

A turbine engine hot section is particularly susceptible to which kind of damage?

- A) Scoring.
- B) Cracking.
- C) Galling.

17. AMP019

The compression ratio of an axial flow compressor is a function of the

- A) number of compressor stages.
- B) rotor diameter.
- C) air inlet velocity.

18. AMP068

Who establishes the recommended operating time between overhauls (TBO) of a turbine engine used in general aviation?

- A) The engine manufacturer.
- B) The operator (utilizing manufacturer data and trend analysis) working in conjunction with the FAA.
- C) The FAA.

19. AMP004

Turbine engine components exposed to high temperatures generally may NOT be marked with

- 1. layout dye.
 - 2. commercial felt tip marker.
 - 3. wax or grease pencil.
 - 4. chalk.
 - 5. graphite lead pencil.
- A) 1, 2, and 3.
 - B) 3 and 5.
 - C) 4 and 5.

20. AMP058

Who establishes mandatory replacement times for critical components of turbine engines?

- A) The FAA.
- B) The operator working in conjunction with the FAA.
- C) The engine manufacturer.

21. AMP068

What is the first engine instrument indication of a successful start of a turbine engine?

- A) A rise in the engine fuel flow.
- B) A rise in oil pressure.
- C) A rise in the exhaust gas temperature.

22. AMP068

The Brayton cycle is known as the constant

- A) pressure cycle.
- B) temperature cycle.
- C) mass cycle.

23. AMP041

How are discharge nozzles in a fuel injected reciprocating engine identified to indicate the flow range?

- A) By an identification letter stamped on one of the hexes of the nozzle body.
- B) By an identification metal tag attached to the nozzle body.
- C) By color codes on the nozzle body.

24. AMP058

What maintenance record(s) is/are required following a major repair of an aircraft engine?

- A) Entries in engine maintenance records and a list of discrepancies for the FAA.
- B) Entries in the engine maintenance record and FAA Form 337.
- C) Entry in logbook.

25. AMP048

What publication is used for guidance to determine whether a powerplant repair is major or minor?

- A) Airworthiness Directives.
- B) Federal Aviation Regulations, Part 43, appendix A.
- C) Technical Standard Orders.

26. AMP012

Which of the following instrument conditions is acceptable and does NOT require immediate correction?

- 1. Red line missing.
 - 2. Pointer loose on shaft.
 - 3. Glass cracked.
 - 4. Mounting screws loose.
 - 5. Case paint chipped.
 - 6. Leaking at line B nut.
 - 7. Will not zero out.
 - 8. Fogged.
- A) 5.
 - B) 4.
 - C) 1.

27. AMP066

Jet engine thermocouples are usually constructed of

- A) alume constantan.
- B) iron constantan.
- C) chromel alumel.

28. AMP009

Thermocouple leads

- A) may be installed with either lead to either post of the indicator.
- B) are designed for a specific installation and may not be altered.
- C) may be repaired using solderless connectors.

29. AMP056

In an aircraft equipped with a pressure drop type fuel flow indicating system, if one of the injector nozzles becomes restricted, this would cause a decrease in fuel flow with

- A) a decreased fuel flow indication on the gauge.
- B) an increased fuel flow indication on the gauge.
- C) no change in fuel flow indication on the gauge.

30. AMP056

The principal fault in the pressure type fuel flowmeter indicating system, installed on a horizontally opposed continuous-flow fuel injected aircraft reciprocating engine, is that a plugged fuel injection nozzle will cause a

- A) normal operation indication.
- B) lower than normal fuel flow indication.
- C) higher than normal fuel flow indication.

31. AMP036

In a fixed fire-extinguishing system, there are two small lines running from the system and exiting overboard.

These line exit ports are covered with a blowout type indicator disc. Which of the following statements is true?

- A) When the red indicator disc is missing, it indicates the fire extinguishing system has been normally discharged.
- B) When the yellow indicator disc is missing, it indicates the fire extinguishing system has been normally discharged.
- C) When the green indicator disc is missing, it indicates the fire extinguishing system has had a thermal discharge.

32. AMP036

(Refer to Powerplant figure 3.) What are the fire-extinguisher container pressure limits when the temperature is 50 F?

- A) 425 - 575 PSIG.
- B) 435 - 605 PSIG.
- C) 475 - 625 PSIG.

33. AMP041

Which of the following fire detectors are commonly used in the power section of an engine nacelle?

- A) CO detectors.
- B) Smoke detectors.
- C) Rate of temperature rise detectors.

34. AMP026

A term commonly used when two or more electrical terminals are installed on a single lug of a terminal strip is

- A) strapping.
- B) piggy backing.
- C) stacking.

35. AMP026

Aircraft electrical wire is manufactured in sizes according to a standard known as

- A) Military Specification (MS).
- B) American Wire Gauge (AWG).
- C) Technical Standard Order (TSO).

36. AMP006

As a general rule, starter brushes are replaced when they are approximately

- A) one half their original length.
- B) one-third their original length.
- C) two-thirds their original length.

37. AMP063

What is used to polish commutators or slip rings?

- A) Very fine sandpaper.
- B) Crocus cloth or fine oilstone.
- C) Aluminum oxide or garnet paper.

38. AMP044

The reason for flashing the field in a generator is to

- A) restore correct polarity and/or residual magnetism to the field poles.
- B) increase generator capacity.
- C) remove excessive deposits.

39. AMP002

What is the ampere-hour rating of a storage battery that is designed to deliver 45 amperes for 2.5 hours?

- A) 112.5 ampere hour.
- B) 90.0 ampere hour.
- C) 45.0 ampere hour.

40. AMP026

When installing electrical wiring parallel to a fuel line, the wiring should be

- A) in metal conduit.
- B) in a non-conductive fire-resistant sleeve.
- C) above the fuel line.

41. AMP029

Which of the following has the greatest effect on the viscosity of lubricating oil?

- A) Temperature.
- B) Engine RPM.
- C) System Pressure.

42. AMP030

Which type valve prevents oil from entering the main accessory case when the engine is not running?

- A) Bypass.
- B) Relief.
- C) Check.

43. AMP030

If an oil filter element becomes completely clogged, the

- A) oil supply to the engine will be blocked.
- B) oil will be bypassed back to the oil tank hopper where larger sediments and foreign matter will settle out prior to passage through the engine.
- C) bypass valve will open and the oil pump will supply unfiltered oil to the engine.

44. AMP056

Oil tank fillers on reciprocating engines are marked with the word

- A) 'oil,' type, and grade, in accordance with 14 CFR part 33.
- B) 'oil,' and tank capacity, in accordance with 14 CFR part 45.
- C) 'oil,' in accordance with 14 CFR part 23.

45. AMP056

In order to maintain a constant oil pressure as the clearances between the moving parts of an engine increase through normal wear, the supply pump output

- A) increases as the resistance offered to the flow of oil increases.
- B) remains relatively constant (at a given RPM) with less oil being returned to the pump inlet by the relief valve.
- C) remains relatively constant (at a given RPM) with more oil being returned to the pump inlet by the relief valve.

46. AMP056

From the following, identify the factor that has the least effect on the oil consumption of a specific engine.

- A) Mechanical efficiency.
- B) Engine RPM.
- C) Lubricant characteristics.

47. AMP029

The viscosity of a liquid is a measure of its

- A) resistance to flow.
- B) rate of change of internal friction with change in temperature.
- C) weight, or density.

48. AMP029

Which of the following factors helps determine the proper grade of oil to use in a particular engine?

- A) Adequate lubrication in various attitudes of flight.
- B) Positive introduction of oil to the bearings.
- C) Operating speeds of bearings.

49. AMP030

Specific gravity is a comparison of the weight of a substance to the weight of an equal volume of

- A) oil at a specific temperature.
- B) distilled water at a specific temperature.
- C) mercury at a specific temperature.

50. AMP068

Igniter plugs used in turbine engines are subjected to high intensity spark discharges and yet they have a long service life because they

- A) operate at much lower temperatures.
- B) are not placed directly into the combustion chamber.
- C) do not require continuous operation.

51. AMP068

(Refer to Powerplant figure 5.) With power applied to the bus bar, what wire supplies standby power to the starter relay contact?

- A) 4.
- B) 7.
- C) 8.

52. AMP063

The primary advantage of pneumatic (air turbine) starters over comparable electric starters for turbine engines is

- A) a decreased fire hazard.
- B) reduction gearing not required.
- C) high power-to-weight ratio.

53. AMP047

When a magneto is disassembled, keepers are usually placed across the poles of the rotating magnet to reduce the loss of magnetism. These keepers are usually made of

- A) chrome magnet steel.
- B) soft iron.
- C) cobalt steel.

54. AMP063

Which of the following are advantages of dual ignition in aircraft engines?

- 1. Gives a more complete and quick combustion of the fuel.
 - 2. Provides a backup magneto system.
 - 3. Increases the output power of the engine.
 - 4. Permits the use of lower grade fuels.
 - 5. Increases the intensity of the spark at the spark plugs.
- A) 2, 3, 4.
 - B) 2, 3, 5.
 - C) 1, 2, 3.

55. AMP068

The capacitor type ignition system is used almost universally on turbine engines primarily because of its high voltage and

- A) low amperage.
- B) long life.
- C) high heat intensity.

56. AMP063

Which of the following are distinct circuits of a high tension magneto?

- 1. Magnetic.
 - 2. Primary.
 - 3. E gap.
 - 4. P lead.
 - 5. Secondary.
- A) 1, 2, 5.
 - B) 1, 3, 4.
 - C) 2, 4, 5.

57. AMP064

Defective spark plugs will cause the engine to run rough at

- A) high speeds only.
- B) low speeds only.
- C) all speeds.

58. AMP063

The secondary coil of a magneto is grounded through the

- A) ignition switch.
- B) primary coil.
- C) grounded side of the breaker points.

59. AMP068

In a turbine engine dc capacitor discharge ignition system, where are the high voltage pulses formed?

- A) At the breaker.
- B) At the triggering transformer.
- C) At the rectifier.

60. AMP047

When a magneto is operating, what is the probable cause for a shift in internal timing

- A) The rotating magnet loses its magnetism.
- B) The distributor gear teeth are wearing on the rotor gear teeth.
- C) The cam follower wear and/or the breaker points wear.

61. AMP022

What corrective action should be taken when a carburetor is found to be leaking fuel from the discharge nozzle?

- A) Replace the needle valve and seat.
- B) Raise the float level.
- C) Turn the fuel off each time the aircraft is parked.

62. AMP041

The primary purpose of the air bleed openings used with continuous flow fuel injector nozzles is to

- A) provide for automatic mixture control.
- B) lean out the mixture.
- C) aid in proper fuel vaporization.

63. AMP037

What component is used to ensure fuel delivery during periods of rapid engine acceleration?

- A) Acceleration pump.
- B) Water injection pump.
- C) Power enrichment unit.

64. AMP038

If a float type carburetor leaks fuel when the engine is stopped, a likely cause is that the

- A) float needle valve is worn or otherwise not seated properly.
- B) float level is adjusted too low.
- C) main air bleed is clogged.

65. AMP068

The generally acceptable way to obtain accurate on-site temperature prior to performing engine trimming is to

- A) call the control tower to obtain field temperature.
- B) observe the reading on the aircraft Outside Air Temperature (OAT) gauge.
- C) hang a thermometer in the shade of the nose wheel-well until the temperature reading stabilizes.

66. AMP056

Which of the following best describes the function of an altitude mixture control?

- A) Regulates the richness of the fuel/air charge entering the engine.
- B) Regulates the air pressure above the fuel in the float chamber.
- C) Regulates the air pressure in the venturi.

67. AMP042

When troubleshooting an engine for too rich a mixture to allow the engine to idle, what would be a possible cause?

- A) Economizer valve not operating correctly.
- B) Mixture setting too rich.
- C) Air leak in the intake manifold.

68. AMP022

What carburetor component actually limits the desired maximum airflow to the engine at full throttle?

- A) Throttle valve.
- B) Venturi.
- C) Manifold intake.

69. AMP068

A supervisory electronic engine control (EEC) is a system that receives engine operating information and

- A) adjusts a standard hydromechanical fuel control unit to obtain the most effective engine operation.
- B) develops the commands to various actuators to control engine parameters.
- C) controls engine operation according to ambient temperature, pressure, and humidity.

70. AMP041

Fuel lines are kept away from sources of heat, and sharp bends and steep rises are avoided to reduce the possibility of

- A) liquid lock.
- B) vapor lock.
- C) positive lock.

71. AMP042

Where should the main fuel strainer be located in the aircraft fuel system?

- A) Downstream from the wobble pump check valve.
- B) At the lowest point in the fuel system.
- C) At any point in the system lower than the carburetor strainer.

72. AMP041

The Federal Aviation Regulations require the fuel flow rate for gravity systems (main and reserve) to be

- A) 125 percent of the takeoff fuel consumption of the engine.
- B) 125 percent of the maximum, except takeoff, fuel consumption of the engine.
- C) 150 percent of the takeoff fuel consumption of the engine.

73. AMP039

The primary condition(s) that allow(s) microorganisms to grow in the fuel in aircraft fuel tanks is (are)

- A) warm temperatures and frequent fueling.
- B) the presence of water.
- C) the presence of dirt or other particulate contaminants.

74. AMP003

A method commonly used to prevent carburetor icing is to

- A) preheat the intake air.
- B) mix alcohol with the fuel.
- C) electrically heat the venturi and throttle valve.

75. AMP065

If a fire starts in the induction system during the engine starting procedure, what should the operator do?

- A) Turn off the fuel switches to stop the fuel.
- B) Continue cranking the engine.
- C) Turn off all switches.

76. AMP070

What is the purpose of the rate of change controller in a turbocharger system?

- A) Limits the maximum manifold pressure that can be produced by the turbocharger at full throttle conditions.
- B) Controls the rate at which the turbocharger discharge pressure will increase.
- C) Controls the position of the waste gate after the aircraft has reached its critical altitude.

77. AMP070

The absolute pressure controller on some small engines is designed to sense oil pressure which flows through the waste gate actuator and then through the controllers on the turbocharger system; the pressure between the turbocharger and the throttle valve is called

- A) turbocharger boost pressure.
- B) induction manifold pressure.
- C) upper deck pressure.

78. AMP056

The position of the cowl flaps during normal cruise flight conditions is

- A) closed.
- B) open.
- C) one half open.

79. AMP056

Cracks in cooling fins that do not extend into the cylinder head may be repaired by

- A) filling the extremities of crack with liquid metal.
- B) removing affected area and contour filing within limits.
- C) welding and then grinding or filing to original thickness.

80. AMP056

A bent cooling fin on an aluminum cylinder head

- A) should be sawed off and filed smooth.
- B) should be left alone if no crack has formed.
- C) should be stop drilled or a small radius filed at the point of the bend.

81. AMP056

Dislodged internal muffler baffles on a small reciprocating engine may

- A) obstruct the muffler outlet and cause excessive exhaust back pressure.
- B) cause the engine to run excessively cool.
- C) cause high fuel and oil consumption.

82. AMP069

The hot section of a turbine engine is particularly susceptible to which of the following kind of damage?

- A) Galling.
- B) Pitting.
- C) Cracking.

83. AMP071

The rearward thrust capability of an engine with the thrust reverser system deployed is

- A) less than its forward capability.
- B) equal to or less than its forward capability, depending on ambient conditions and system design.
- C) equal to its forward capability.

84. AMP008

Which statement is generally true regarding thrust reverser systems?

- A) It is possible to move some aircraft backward on the ground using reverse thrust.
- B) Engine thrust reversers on the same aircraft usually will not operate independently of each other (must all be simultaneously).
- C) Mechanical blockage system design permits a deployment position aft of the exhaust nozzle only.

85. AMP052

Which of the following determines oil and grease specifications for lubrication of propellers?

- A) Airframe manufacturers.
- B) Engine manufacturers.
- C) Propeller manufacturers.

86. AMP052

How can a steel propeller hub be tested for cracks?

- A) By anodizing.
- B) By magnetic particle inspection.
- C) By etching.

87. AMP052

Propellers exposed to salt spray should be flushed with

- A) stoddard solvent.
- B) fresh water.
- C) soapy water.

88. AMP052

Inspection of propeller blades by dye-penetrant inspection is accomplished to detect

- A) cracks or other defects.
- B) corrosion at the blade tip.
- C) torsional stress.

89. AMP053

Propeller blade station numbers increase from

- A) hub center line to tip.
- B) tip to hub center line.
- C) blade shank butt to tip.

90. AMP052

Which of the following defects is cause for rejection of wood propellers?

- A) Solder missing from screw heads securing metal tipping.
- B) An oversize hub or bolthole, or elongated boltholes.
- C) No protective coating on propeller.

91. AMP053

Ice formation on propellers, when an aircraft is in flight, will

- A) decrease thrust and cause excessive vibration.
- B) increase aircraft stall speed and increase noise.
- C) decrease available engine power.

92. AMP053

How is anti icing fluid ejected from the slinger ring on a propeller?

- A) By pump pressure.
- B) By centripetal force.
- C) By centrifugal force.

93. AMP052

If a flanged propeller shaft has dowel pins

- A) install the propeller so that the blades are positioned for hand propping.
- B) the propeller can be installed in only one position.
- C) check carefully for front cone bottoming against the pins.

94. AMP053

How does the propeller overspeed governor on a turboprop engine decrease propeller RPM?

- A) By allowing oil to escape from the propeller hub thus driving the blades to a increased blade angle.
- B) By increasing oil pressure in the propeller thus driving the blades to a increased blade angle.
- C) By reducing fuel flow to the fuel control thus driving the blades to a increased blade angle.

95. AMP052

Which of the following statements concerning the installation of a new fixed pitch wood propeller is true?

- A) If a separate metal hub is used, final track should be accomplished prior to installing the hub in the propeller.
- B) NAS close tolerance bolts should be used to install the propeller.
- C) Inspect the bolts for tightness after the first flight and again after the first 25 hours of flying.

96. AMP052

After proper removal of aluminum blade damage, the affected surface should be polished with

- A) fine steel wool.
- B) very fine sandpaper.
- C) powdered soapstone.

97. AMP052

Which of the following generally renders an aluminum alloy propeller unrepairable?

- A) Any repairs that would require shortening and re-contouring of blades.
- B) Any slag inclusions or cold shuts.
- C) Transverse cracks of any size.

98. AMP053

The primary purpose of a propeller is to

- A) create lift on the fixed airfoils of an aircraft.
- B) change engine horsepower to thrust.
- C) provide static and dynamic stability of an aircraft in flight.

99. AMP052

When lubricating a Hartzell propeller blade with grease, to prevent damage to the blade seals, the service manual may recommend on some models to

- A) pump grease into both zerk fittings for the blade simultaneously.
- B) remove the seals prior to greasing and reinstall them afterwards.
- C) remove one of the two zerk fittings for the blade and grease the blade through the remaining fitting.

100. AMP017

Fuel is normally supplied to an APU from

- A) its own independent fuel supply.
- B) the airplane's reserve fuel supply.
- C) the airplane's main fuel supply.